

display parameters and a plurality of filter parameters, the user interface module filtering the financial information to comply with the plurality of filter parameters; and

a virtual reality generator module generating, continuously modifying, and displaying on a display device a virtual reality world being a three dimensional interface that enables a user to simulate movement through and interact with the financial information, the virtual reality world representing the filtered financial information and satisfying the plurality of display parameters;

wherein when the user simulates movement through and interacts with the financial information, a user viewing the display device has a sensation of travelling through and within the virtual reality world.

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86.

The virtual reality generator of claim ¹85 wherein the display device is a visual stereoscopic head-mounted display device.

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87.

The virtual reality generator of claim 85 wherein the financial information is displayed as a plurality of metaphors in the virtual reality world.

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The virtual reality generator of claim ²87 wherein the plurality of metaphors include geometric primitives.

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The virtual reality generator of claim ²87 wherein the plurality of metaphors include polygons.

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90. The virtual reality generator of claim ~~87~~² wherein the plurality of metaphors are rotatable.

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91. The virtual reality generator of claim ~~87~~² wherein the plurality of metaphors have variable luminance.

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92. The virtual reality generator of claim 87 wherein a subset of the plurality of metaphors is selected to rotate by a predetermined one of the plurality of display parameters, each metaphor in the subset generated by the virtual reality generator module such that it rotates.

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93. The virtual reality generator of claim 87 wherein a subset of the plurality of metaphors is selected to flash by a predetermined one of the plurality of display parameters, each metaphor in the subset generated by the virtual reality module such that it flashes.

94. The virtual reality generator of claim 85 wherein the plurality of display parameters comprise attributes of financial instruments.

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95. The virtual reality generator of claim ~~85~~¹ wherein the user interface module includes means for displaying a simulated cockpit.

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96. The virtual reality generator of claim ~~85~~¹ wherein the virtual reality world is divided into a grid of sub-regions.

Sub 17
97. The virtual reality generator of claim 96 wherein the virtual reality world represents the financial information for a single industry and each sub-region represents the financial information for the single industry in a plurality of markets.

98. The virtual reality generator of claim 85 wherein the virtual reality world comprises a plurality of metaphors representing a plurality of stocks, each one of the plurality of stocks displayed in the virtual reality world satisfying the filter parameters.

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99. The virtual reality generator of claim 98 wherein each one of the plurality of metaphors have shape, size, position, behavior and color to represent financial information concerning one of the plurality of stocks.

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100. The virtual reality generator of claim 99 wherein the virtual reality world is updated at least 30 times per second.

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101. The virtual reality generator of claim 100 wherein the virtual reality generator module includes means for generating and simultaneously displaying a plurality of virtual reality worlds.

Sub 15
102. The virtual reality generator of claim 87 wherein the user interface module includes means for selecting one of the plurality of metaphors and wherein the virtual reality generator module includes means for displaying information relating to the selected one of the plurality of metaphors.

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103.

The virtual reality generator of claim 102 further comprising means for producing sounds relating to the selected one of the plurality of metaphors.

104.

A virtual reality generator to generate and display on a display device a stream of financial information received from a financial analytic system, the virtual reality generator comprising:

an input module to continuously receive the stream of financial information from the financial analytic system; and

a virtual reality generator module to generate and display a virtual reality world on the display device, the virtual reality world being a multi-dimensional representation of the stream of financial information displayable from a plurality of user selected perspectives to enable a user to simulate movement through the virtual reality world such that the user has a sensation of travelling through and within the virtual reality world, the virtual reality generator module including:

(i) means for generating and continuously modifying the virtual reality world so that the virtual reality world correspondingly represents the stream of financial information,

(ii) means for causing the virtual reality world to be displayed on the display device, and

(iii) means for simulating, on the display device, movement through the virtual reality world such that the user viewing the display device has a sensation of travelling through and within the virtual reality world.

105.

The virtual reality generator of claim 104 wherein a view of the virtual reality world is generated by the virtual reality generator module at least 30 times per second, and wherein the virtual reality generator module further comprises means for updating the virtual reality world displayed on the display device at least 30 times per second.

106.

A virtual reality generator to display on a display device financial information, the virtual reality generator comprising:

an input module to receive financial information as input; and

a virtual reality generator module to generate and display a virtual reality world on the display device, the virtual reality world being a multi-dimensional representation of the financial information continuously displayed from a plurality of user selected perspectives to enable a user to simulate movement through the virtual reality world such that the user has a sensation of travelling through and within the virtual reality world, the virtual reality generator module including:

(i) means for generating the virtual reality world representing the financial information,

(ii) means for causing the virtual reality world to be displayed on the display device from a plurality of perspectives, and

(iii) means for simulating, on the display device, movement through the virtual reality world such that the user viewing the display device has a sensation of travelling through and within the virtual reality world.

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107. The virtual reality generator of claim ~~106~~ wherein a view of the virtual reality world is generated by the virtual reality generator module at least 30 times per second, and wherein the virtual reality generator module further comprises means for updating the virtual reality world displayed on the display device at least 30 times per second.

~~2525~~ 108. The virtual reality generator of claim 106 wherein the input module receives the financial information from a real-time data feed.

~~2726~~ 109. The virtual reality generator of claim ~~106~~ wherein the input module receives the financial information from a database of financial information.

~~2827~~ 110. The virtual reality generator of claim ~~106~~ wherein the input module receives the financial information from a real-time data feed and a database.

~~2928~~ 111. The virtual reality generator of claim ~~106~~ wherein the financial information is pre-processed by an analytic system prior to receipt by the input module.

~~3029~~ 112. The virtual reality generator of claim ~~106~~ wherein the financial information is pre-processed by a knowledge-base system prior to receipt by the input module.

~~3130~~ 113. The virtual reality generator of claim ~~106~~ wherein the financial information is pre-processed by a neural network prior

receipt by the input module.

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114. The virtual reality generator of claim 106 wherein the simulated movement is controlled by movement of a headset containing the display device. *2423*

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115. The virtual reality generator of claim 106 wherein the virtual reality world comprises a plurality of metaphors, each one of the plurality of metaphors representing a subset of financial information.

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116. The virtual reality generator of claim 106 wherein the display device is a monitor. *2423*

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117. The virtual reality generator of claim 106 wherein the display device is a visual stereoscopic head-mounted display device. *2423*

Sub D10
118. A virtual reality generator to display on a display device financial information as a virtual reality world, the virtual reality world being an interface that enables a user to simulate movement through the financial information, the virtual reality generator comprising:

means for receiving as input in real-time financial information from a real-time data source of financial information; and

a virtual reality generator module to generate and display a virtual reality world on the display device, the virtual reality world being a multi-dimensional representation of the financial

information displayable from a plurality of user selected perspectives to enable a user to simulate movement through the virtual reality world such that the user has a sensation of travelling through and within the virtual reality world, the virtual reality generator module including means for:

- (i) generating, in real-time as the financial information is received from the real-time data source of financial information, the virtual reality world representing the financial information,
- (ii) displaying in real-time on the display device the virtual reality world representing the financial information,
- (iii) displaying the virtual reality world from a plurality of perspectives, and
- (iv) simulating in real-time, on the display device, movement through the virtual reality world.

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119.

The virtual reality generator of claim ~~118~~ 35 wherein the virtual reality world is updated at least 30 times per second.

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120.

The virtual reality generator of claim ~~118~~ 35 wherein the virtual reality generator module includes means for generating and simultaneously displaying a plurality of virtual reality worlds.

~~121~~ 37
121.

The virtual reality generator of claim 118 wherein the financial information is displayed as a plurality of metaphors in the virtual reality world.

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122.

The virtual reality generator of claim ~~121~~ 36 wherein the

virtual reality generator module includes means for selecting one of the plurality of metaphors and wherein the virtual reality generator module includes means for displaying information relating to the selected one of the plurality of metaphors.

123. A virtual reality generator comprising:

an input module to receive packets of financial information at regular predetermined intervals;

display means for displaying on a display device a virtual reality world generated from the packets of financial information, the virtual reality world being a multi-dimensional representation of the packets of financial information continuously displayed from a plurality of user selected perspectives to enable a user to simulate movement through and interact with the virtual reality world such that the user, when viewing the display device, has a sensation of travelling within the virtual reality world; and

processing means for updating the virtual reality world when a new packet of financial information is received by the input module.

124. A computer-based method for displaying and manipulating large quantities of financial information, the method comprising the steps of:

receiving as input pre-processed financial information;

controllably selecting a part of the pre-processed financial information for display;

generating a virtual reality world from the financial information selected for display, the virtual reality world being a multi-dimensional representation of the financial information

capable of being displayed from a plurality of user selected perspectives to enable a user to simulate movement through the virtual reality world; and

displaying on a display device the virtual reality world as a multi-dimensional computer-generated interface that enables simulation of movement through and interaction with the financial information such that the user, when viewing the display device, has a sensation of travelling through and within the financial information displayed as the virtual reality world.

125. A computer implemented method for displaying and manipulating financial information, the method comprising the steps of:

continuously receiving as input packets of financial information;

generating, utilizing a computer processor, a virtual reality world from the packets of financial information, the virtual reality world representing the financial information and capable of being displayed from a plurality of perspectives to enable a user to simulate movement through the virtual reality world;

displaying the virtual reality world as a three-dimensional representation on a display device such that a user can simulate movement through the financial information;

updating, utilizing the computer processor, the virtual reality world on the display device when a packet of financial information is received; and

simulating movement through the virtual reality world on the display device such that the user, when viewing the display device, has a sensation of travelling through and within the virtual